

12

EUROPEAN PATENT APPLICATION

21 Application number: **89201422.6**

51 Int. Cl.4: **H01K 1/46 , H01J 5/56**

22 Date of filing: **05.06.89**

30 Priority: **09.06.88 NL 8801480**

43 Date of publication of application:
13.12.89 Bulletin 89/50

84 Designated Contracting States:
BE DE FR GB NL

71 Applicant: **N.V. Philips' Gloeilampenfabrieken
Groenewoudseweg 1
NL-5621 BA Eindhoven(NL)**

72 Inventor: **Janssen, Eduard Jozef Philomena
c/o INT. OCTROOIBUREAU B.V. Prof.
Holstlaan 6
NL-5656 AA Eindhoven(NL)**
Inventor: **Notelteirs, Victor Rosallie
c/o INT. OCTROOIBUREAU B.V. Prof.
Holstlaan 6
NL-5656 AA Eindhoven(NL)**

74 Representative: **Rooda, Hans et al
INTERNATIONAAL OCTROOIBUREAU B.V.
Prof. Holstlaan 6
NL-5656 AA Eindhoven(NL)**

54 Electric lamp.

57 The electric lamp has ceramic lamp caps (7, 8) secured to the lamp vessel (1) without the use of cement. This is realised by securing the cable (9) to the current supply conductor (5) after the lamp cap (7) has been provided. Securing is made possible by the shape of the lamp cap (7) which has a cavity (13) for the seal (2) of conductor (5), which duct runs into a recess (14) for the cable (9). A bore (15) enables the cable (9) to be connected to the current supply conductor (5) after the lamp cap (7) has been provided.

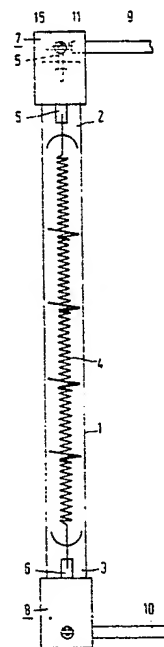


FIG.1

EP 0 345 890 A1

Electric lamp.

The invention relates to an electric lamp comprising a translucent lamp vessel which is sealed in a vacuum-tight manner and has a seal at its ends, an electric element in the lamp vessel, current supply conductors which are passed to the electric element through a respective seal, ceramic lamp caps each having a cavity at least partly accommodating a respective seal, electrically conducting cables having a first end secured to a respective current supply conductor, said cables being passed to the exterior through an opening in the relevant lamp cap transversely to the relevant current supply conductor.

A lamp of this type is known from and described in GB 8,807,227.

In the known lamp the ceramic lamp caps are secured to the seals of the lamp vessel by means of cement. It has been found that the seals in such a lamp may break owing to mechanical stresses caused by the use of cement. In fact, lamps to which cables are secured are often used for purposes at which the seals assume a relatively high temperature during operation of the lamp. The lamp may also break easily when it is placed in a luminaire holding the lamp at its lamp caps.

It is an object of the invention to provide a lamp of the type described in the opening paragraph, which has a simple lamp cap secured without the use of cement.

According to the invention this object is realised in that each ceramic lamp cap comprises a duct which is accessible from the cavity of the lamp cap and accommodates the relevant current supply conductor,

a recess which is transverse to the duct and accommodates the first end of the relevant cable, said recess crossing the duct at a distance from the cavity,

a bore which is transverse to the recess and the duct and in which the recess crosses the duct and in which the electric cable is secured to the current supply conductor.

In the lamp according to the invention a lamp cap is secured to the lamp vessel when the cable is secured to the relevant current supply conductor. The lamp cap has the bore to enable the cable to be secured while the lamp cap has already been positioned. A welded or soldered joint can be made via this bore. After this joint has been made, the lamp cap and the lamp vessel are undetachably coupled. Consequently, this coupling does not require cement or any other means. The only component that is required is the specially shaped lamp cap.

The lamp cap may laterally surround the seal on only two opposite sides, or, in another embodiment, it may laterally surround the seal circumferentially.

The electric element may be a filament or an electrode pair.

An embodiment of the lamp according to the invention will now be described in greater detail with reference to the accompanying drawing.

In this drawing

Fig. 1 shows a lamp in a side elevation,

Fig. 2 shows a lamp cap of Fig. 1 on a larger scale in a side elevation,

Fig. 3 shows the lamp cap of Fig. 2 in an elevation taken on the line III-III in Fig. 2,

Fig. 4 shows the lamp cap of Fig. 2 in a side elevation taken on the line IV-IV in Fig. 2.

The electric lamp of Fig. 1 has a translucent lamp vessel 1 which is sealed in a vacuum-tight manner and which has seals 2, 3 at its ends. The lamp vessel 1 accommodates a filament as an electric element 4 to which current supply conductors 5, 6 are connected which are passed through the seals 2, 3, respectively. The lamp has ceramic lamp caps 7, 8 each having a cavity 13 (Fig. 2) which at least partly accommodates a respective seal 2, 3. Electrically conducting cables 9, 10 have a first end 11 secured to a respective current supply conductor 5, 6. The cables 9, 10 are passed to the exterior through an opening in the relevant lamp cap 7, 8 transversely to the relevant current supply conductor 5, 6.

Each ceramic lamp cap 7, 8 has a duct 12 (Figs. 2-4) which is accessible from the cavity 13 of this lamp cap 7, 8 which accommodates a seal 2, 3 (Fig. 1). This duct 12 accommodates the relevant current supply conductor 5, 6. The lamp cap 7, 8 has a recess 14 transverse to the duct 12, which recess 14 accommodates the first end 11 of the relevant cable 9 and crosses the duct 12 at a distance from the cavity 13. The lamp cap 7, 8 also has a bore 15 which is transverse to the recess 14 and the duct 12 in which the recess crosses the duct and in which the current supply conductors 5, 6 are secured to the cables 9, 10, respectively.

The cables 9, 10 are secured to the current supply conductors 5, 6 via the bore 15, after the lamp caps 7, 8 have been arranged on the lamp vessel 1. The cables 9, 10 fix the lamp caps 7, 8 on the lamp vessel 1 without additional means.

The lamp caps 7, 8 laterally surround the respective seals 2, 3 circumferentially because, apart from the duct 12, the cavity 13 is open on one side only.

Claims

1. An electric lamp comprising
a translucent lamp vessel which is sealed in a
vacuum-tight manner and has a seal at its ends, 5
an electric element in the lamp vessel,
current supply conductors which are passed to the
electric element through a respective seal,
ceramic lamp caps each having a cavity at least
partly accommodating a respective seal, 10
electrically conducting cables having a first end
secured to a respective current supply conductor,
said cables being passed to the exterior through an
opening in the relevant lamp cap transversely to
the relevant current supply conductor, character- 15
ized in that each ceramic lamp cap comprises
a duct which is accessible from the cavity of the
lamp cap and accommodates the relevant current
supply conductor,
a recess which is transverse to the duct and ac- 20
commodates the first end of the relevant cable,
said recess crossing the duct at a distance from
the cavity,
a bore which is transverse to the recess and the
duct and in which the recess crosses the duct and 25
in which the electric cable is secured to the current
supply conductor.

2. An electric lamp as claimed in Claim 1,
characterized in that the lamp caps laterally sur- 30
round the relevant seal circumferentially.

35

40

45

50

55

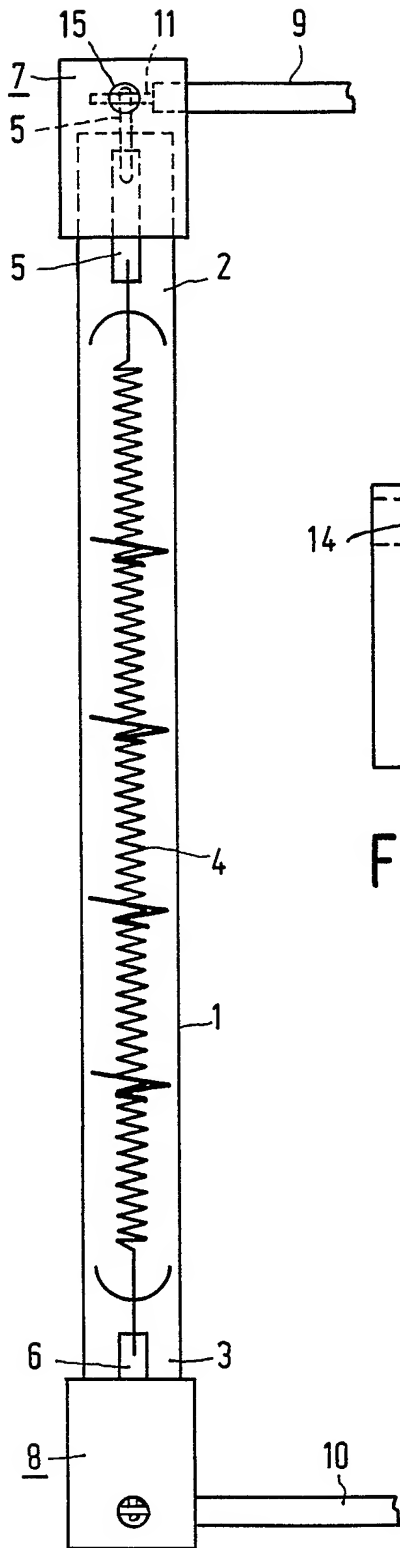


FIG. 1

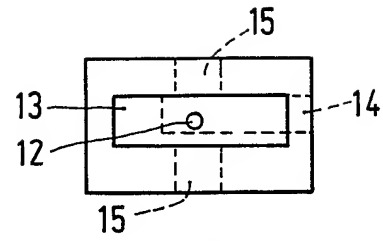


FIG. 3

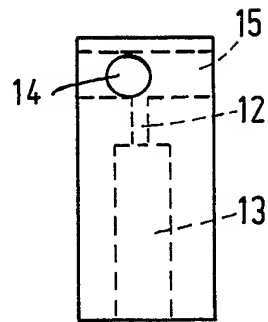


FIG. 4

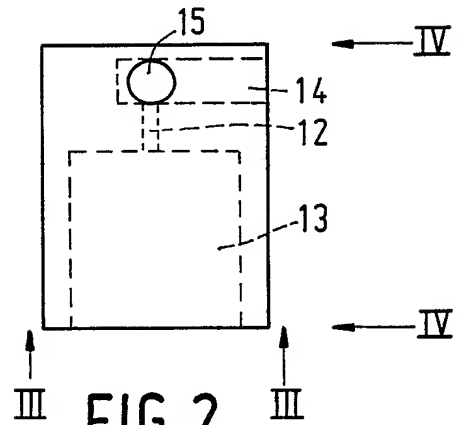


FIG. 2



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	US-A-4 379 978 (R.L. HOCKENBROCK) * Column 6, line 44 - column 7, line 10; figures 4-6 * ---	1	H 01 K 1/46 H 01 J 5/56
A	DE-U-8 615 237 (THORN EMI PLC) * Whole document * ---	1	
A	FR-A- 589 724 (A.J.B. MARSAT) * Whole document * ---	1	
A	DE-C- 129 072 (K. MÜLLER) * Whole document * -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			H 01 K 1/00 H 01 J 5/00
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11-08-1989	Examiner SARNEEL A.P.T.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			